

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND
INTERFERENCES

In re Application of
Gijsbert Joseph Van Den
Enden, et al.

LASER DIODE CONTROLLER IN
REWRITABLE OPTICAL
RECORDING DEVICES

Serial No. 09/787,095

Group Art Unit: 2652

Examiner: Peter Vincent Agustin

Confirmation No. 1084

Filed: March 13 2001

Honorable Commissioner of Patents and Trademarks
Alexandria VA. 22313-1450

Sir:

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Serial No. 09/787,095

The appellants gratefully acknowledge the withdrawal of the rejection of claims 1-20 under the provisions of 35 U.S.C. §112, first paragraph contained in the Examiner's Answer mailed April 20, 2007.

Grounds of Rejection to be Reviewed on Appeal

The rejection of appealed claims 1-6 and 17-20 under the provisions of 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential elements

This rejection pertains to the appealed claims omitting essential elements. The second paragraph of 35 U.S.C. §112 states that the specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention. There are two separate requirements set forth in this paragraph: (A) the claims must set forth the subject matter that applicants regard as their invention; and (B) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant. The appellants, respectfully, note that neither the rejection nor the Examiner's Answer identify which of the separate requirements under 35 U.S.C. §112, second paragraph is being used in making this rejection.

The MPEP at §2171 states that the first requirement, (A) the claims must set forth the subject matter that applicants regard as their invention, is a subjective one because it is dependent on what the applicants for a patent regard as their invention. The MPEP at §2172 states that a rejection based on the failure to satisfy this requirement is appropriate only where applicant has stated, somewhere other than in the application as filed, that the invention is something different from what is defined by the claims. There have been **no** assertions made by the examiner, either in the rejection or the Examiner's Answer that the appellants have stated either in the present application for invention, or anywhere, that the invention is something different from what is defined by the claims. Accordingly, the appellants assert that there is no basis for a rejection that the appealed claims do not set forth the subject matter that applicants regard as their invention

The MPEP at §2171 states that the second requirement, (B) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be

protected by the patent grant, is an objective one because it is not dependent on the views of applicant or any particular individual, but is evaluated in the context of whether the claim is definite - i.e., whether the scope of the claim is clear to a hypothetical person possessing the ordinary level of skill in the pertinent art.

The appealed claims define subject matter for an electronic optical recording device for optical recording on rewritable media, with which two different states can be recorded by adjusting a power level of a laser diode depending on information content to be generated on the media. The Examiner's Answer states that is nothing more than a recitation and intended use. The appellants, respectfully, disagree. The electronic optical recording device for optical recording on rewritable media, with which two different states can be recorded by adjusting a power level of a laser diode depending on information content to be generated on the media, is a clear statement defining the metes and bounds of the invention being claimed. The manner of recording on the optical media is by adjusting the power level of a laser diode according to the information to be recorded.

The appealed claims are characterized in that during writing of the states a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states. The Examiner's Answer asserts that this language is only a recitation of desired results. The appellants assert that the foregoing recitation contained within the appealed claims is not a recitation of desired results and is at the very least a description of the function that is being performed. The recitation states that a reflection is measured from the spot of only one of the states; this is clearly at least functional language. The measured value of the reflection is used for controlling the power of the laser diode for writing of both states; this again is at least a statement of the function being performed.

"A functional limitation is an attempt to define something by what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper." *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971). See MPEP §2173.05(g). "A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is

often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step.” In *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004). See MPEP §2173.05(g). The appellants assert that the recitation within the appealed claims for “during writing of the states a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states” alerts a person of ordinary skill in the pertinent art that using a measured reflection of only one of the states during writing is used to control laser power for writing of states are the boundaries of the claimed invention. Accordingly, the purpose of definiteness for ensuring that the scope of the claims is clear so the public is informed of the boundaries of what constitutes infringement of the invention is satisfied.

The appellants further assert that the terminology “during writing of the states a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states” is more than just functional language. The foregoing recitation clearly states that the laser diode is focused upon a spot. A laser diode is not functional. A reflection is measured from the spot of only one of the states refers to a reflection that is not a function but a real thing that is being measured. A measured value of the reflection is again not a function but at least a portion of the reflection. The only possible functional element would be controlling the power of the laser diode for writing of both states; however, the actual control of the laser diode is clearly states as being a measured value of the reflection, which is not functional.

The appellants assert that the two separate requirements set forth by 35 U.S.C. §112, second paragraph for: (A) the claims must set forth the subject matter that applicants regard as their invention; and (B) the claims must particularly point out and distinctly define the metes and bounds of the subject matter that will be protected by the patent grant are satisfied by the appealed claims.

The rejection of appealed claims 1, 2, 6-8 and 12 under the provisions of 35 U.S.C. §102(b) as being anticipated by *Aoki* (U.S. Patent No. 5,712,839)

The appealed claims define an electronic optical recording device for optical recording on rewritable media for which two different states can be recorded by adjusting a power level of a laser diode depending on information content to be generated on the media. The appealed claims further define, that during writing of the states, a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). In order to anticipate a claim, a reference must teach each and every element of the claim. See MPEP at §2131. Therefore, in order to anticipate the appealed claims, a reference must record two different states and during writing of the states, a beam from the laser diode needs to be focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection must then be used for controlling the power of the laser diode for writing of both states.

The appellants assert that the Examiner's Answer contains statements that tacitly admit that *Aoki* (U.S. Patent No. 5,712,839) does not anticipate the appealed claims. For example, the Examiner's Answer on the bottom of page 8, discusses the teachings of *Aoki* contained on column 4, line 66 through column 5, line 1; wherein, the monitoring of light reflection employs the bias power (erase power). The appellants, respectfully, direct the Board's attention to *Aoki* at column 4, lines 52-62, wherein *Aoki* discusses the bias (erase) power, the recording power and the read power. The bias (erase) power is stated to be 5-7 milliwatts; the recording power is stated to be 10-15 milliwatts; and the read power is stated to be about 0.7 milliwatts. The appellants, respectfully, point out that the examiner's entire argument revolves around citing the monitoring of the bias (erase) power used by *Aoki*. The appealed claims all define subject matter for "during writing of the states, a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one

of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states”. This subject matter for measuring a reflection during writing of the states and a measured value of the reflection used for controlling the power of the laser diode for writing of both states is not disclosed or suggested by *Aoki*. Furthermore, the Examiner’s Answer essentially admits this point by referring to the bias (erase) power being monitored and used to control laser power. To anticipate the "identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). See MPEP §2131. *Aoki* does not show the identical invention as defined by the appealed claims. Therefore, *Aoki* does not anticipate the appealed claims.

The Examiner’s Answer beginning on the top of page 9 presents the argument that the term “during writing periods” as defined by the appealed claims is interpreted as corresponding to the recording taught by *Aoki*. The examiner in making this argument also directs the Board’s attention to *Aoki* at column 4, line 62 through column 5, line 16. The appellants, respectfully, point out that *Aoki* at column 4, line 62 through column 5, line 16 refers to the above discussed passage of *Aoki* at column 4, lines 52-62, wherein *Aoki* discusses the bias (erase) power stated to be 5-7 milliwatts; the recording power stated to be 10-15 milliwatts; and the read power stated to be about 0.7 milliwatts. *Aoki* at column 4, line 63 through column 5, line 1, unequivocally states that “when the light source 1 radiates the light having the recording power, the reflection from the recording medium is not monitored. On the other hand, when the light source 1 radiates the light having the bias power (the erase power), the reflection light from the recording medium is monitored.” Using the definitions supplied by the examiner, “during writing periods” recites by the appealed claims is interpreted as corresponding to recording as taught by *Aoki*, it is abundantly clear that *Aoki* can not anticipate the appealed claims because *Aoki* teaches when the light source radiates the light having the recording power, the reflection from the recording medium is not monitored. The appealed claims all define subject matter for “during writing of the states, a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states”. *Aoki* teaches that when the light at the recording power radiates the recording

medium, the reflection from the recording medium is not monitored. Therefore, the examiner has effectively admitted that *Aoki* can not anticipate the appealed claims.

The argument presented by the Examiner's Answer contained on the middle of page 9 contains a discussion of phase change media and the transitions that occur in phase change media between amorphous and crystalline states. This discussion concludes with the statement that data that has been written can be erased by recording new data on the old data, i.e. "overwriting". The examiner then directs the Board to *Kaku et al.* (U.S. Patent No. 4,807,210). The appellants object to the usage of *Kaku et al.* in combination with *Aoki* as constituting a new rejection. *Kaku et al.* has not been cited before in this case; this will be discussed further below. The appellants assert that using of *Kaku et al.* for evidence of the existence of overwriting still does not anticipate the appealed claims. The appealed claims define subject matter for "in that during writing of the states, a beam from the laser diode is focused upon a spot that is written for one of the states, a reflection is measured from the spot of only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states." Overwriting as taught by *Kaku et al.* does not disclose or suggest using a reflected value from either the amorphous or crystalline states to control the power of the laser diode for writing of both states. The examiner is overreaching in the use of a new reference to attempt to blur the clear and unequivocal teachings of *Aoki* that use a bias (erase) level to monitor the reflected signal, wherein the bias (erase) level is unequivocally stated as being different than the recording level. The examiner further overreaches by attempting to use two different references in an anticipation rejection; especially wherein the basic principals of these references are fundamentally different. *Aoki* does not use overwriting. *Aoki* is a phase change reference and more recent of a reference than *Kaku et al.* The concept for overwriting as taught by the much older reference *Kaku et al.* are clearly known to *Aoki* at the time of filing of the *Aoki* reference and it is abundantly clear that *Aoki* do not teach, disclose or suggest to monitor reflected laser signals using recording power levels.

The examiner asserts that the use of *Kaku et al.* is an evidentiary use. Accordingly, the appellants are compelled to respond to the use of newly cited reference *Kaku et al.* in combination with *Aoki*. The examiner, apparently, cites *Kaku et al.* as evidence for the concept of "overwriting". It should be noted that the examiner attempts to use *Kaku et al.* to support the assertion that erasure and recording either amorphous or crystalline states are

equivalent and that during writing periods the light source can use either recording or erasure pulses. The position taken by the Examiner's Answer in using the new reference *Kaku et al.* is a position that completely contradicts the teachings of the main reference, *Aoki*. *Aoki* clearly teach the use of a bias (erase) level to monitor the reflected signal, wherein the bias (erase) level is clearly stated as being different than the recording level, and *Aoki* clearly teach away from using a recording level to monitor the reflected signal. The appellants assert that the manner of use of this newly raised reference, *Kaku et al.*, as presented within the Examiner's Answer complete controverts the teachings of *Aoki*.

As previously discussed, *Aoki* at column 4, lines 52-62 discusses the bias (erase) power stated to be 5-7 milliwatts; the recording power stated to be 10-15 milliwatts; and the read power stated to be about 0.7 milliwatts. *Aoki* at column 4, line 63 through column 5, line 1, unequivocally states that "when the light source 1 radiates the light having the recording power, the reflection from the recording medium is not monitored. On the other hand, when the light source 1 radiates the light having the bias power (the erase power), the reflection light from the recording medium is monitored."

The use by *Kaku et al.* as evidence that overwriting is known in the art results in a combination of two references. If this combination of *Kaku et al.* with *Aoki* was made in an obviousness rejection (as well it should be), then the combination would not be a proper combination.

If the "proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." See MPEP at §2143.01. Using overwriting as taught by *Kaku et al.* would force *Aoki* to monitor a reflected signal at the recording power which is stated by *Aoki* to be 10-15 milliwatts at column 4, lines 52-62. *Aoki* teaches to monitor a reflected signal at the bias (erase) power that is stated at column 4, lines 52-62 to be 5-7 milliwatts. *Aoki* employs the bias (erase) level because it is a less reflecting level than the recording level (see reflection signal shown in Figure 3 of *Aoki* wherein the reflection signal is less during bias power levels than recording levels). *Aoki* monitors reflections occurring during an erase state; which is specifically distinguished within *Aoki* from a recording state. Therefore, the proposed modification would render *Aoki*

unsatisfactory for its intended purpose of monitoring the reflected laser signal at the bias (erase) level. Therefore, there is no suggestion or motivation to make the proposed modification.

If “the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).” See MPEP at §2143.01. Using overwriting as taught by *Kaku et al.* would change the principle of operation of *Aoki* from monitoring a reflected signal at the recording power stated to be 10-15 to monitoring a reflected signal at the bias (erase) power of 5-7 milliwatts (see *Aoki* column 4, lines 52-62). *Aoki* employs the bias (erase) level as less reflecting level than the recording level (see reflection signal shown in Figure 3 of *Aoki* wherein the reflection signal is less during bias power levels than recording levels). *Aoki* monitors reflections occurring during an erase state; which is specifically distinguished within *Aoki* from a recording state. Therefore, the proposed modification would change the principle of operation of *Aoki*, and the teachings of these references are not sufficient to render the claims *prima facie* obvious.

The appellants would like draw the Board’s attention to the statement made in the examiner’s Answer on page 10, wherein the examiner states that allegations that the examiner attempts to insert a definition that the erase state is the same as the highly reflective state. The appellants, respectfully, point out that the entire discussion from the middle of page 9 through the top of page 10 of the Examiner’s Answer do explicitly that which the examiner denies doing. On the third and forth lines from the bottom of page 9 the examiner specifically states that “At any instance ‘during writing periods’, it is expected that the light source uses either a ‘recording’ or ‘erasing’ power.” Note that there is no support in the cited references for this assertion, only the conjecture and speculation on the part of the examiner that recording or erasing power is the same. This stance by the examiner completely contradicts that specific teachings of the reference *Aoki* that allegedly anticipates the appealed claims.

The rejection of appealed claims 3-5, 9-11 and 13-20 under the provisions of 35 U.S.C. §103(a) as being obvious over *Aoki* in view of *Johann et al.* (U.S. Patent No. 5,184,343)

Appealed claims 3-5, 9-11 and 13-20 are rejected under the provisions of 35 U.S.C. §103(a) as being obvious over *Aoki* in view of *Johann et al.* (U.S. Patent No. 5,184,343)

The peak detection taught by *Johann et al.* is a negative peak detection that is used to detect if the most negative extremes of the data signal falls below the average read level (see col. 4, lines 57-62). Note that there is no disclosure or suggestion within *Johann et al.* for during writing of the states, a beam from the laser diode is focused upon a spot that is written for one of the states, measuring a reflection only one of the states and a measured value of the reflection is used for controlling the power of the laser diode for writing of both states. The peak detection of *Johann et al.* specifically works at a read level and not a writing level as defined by the appealed claims, therefore, the combination does not contain all the elements defined by the appealed claims.

The combination made in the rejection attempts to insert a peak detector of *Johann et al.* in place using the DC level of the bias radiation as taught by *Aoki*. This modification would render *Aoki* unsatisfactory for its intended purpose. This combination is mere conjecture on the part examiner because there is no support provided that persons skilled within would view the combination made by the rejection as operational. Therefore, there is no suggestion to make the combination made in the rejection.

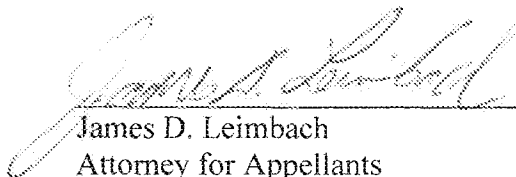
The proposed modification or combination of the prior art would change the principle of operation of the cited prior art references being modified. Replacing the DC level of the bias radiation as taught by *Aoki* with the peak detector of *Johann et al.* would clearly change the principle of operation of *Aoki* so modified.

Furthermore, no reasonable expectation of success is provided within the references, as required for a *prima facie* case of obviousness.

Conclusion

In summary, the examiner's rejections of the claims are believed to be in error for the reasons explained above. The rejections of each of claims 1-20 should be reversed.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "James D. Leimbach", is written over a horizontal line.

James D. Leimbach
Attorney for Appellants
Registration No. 34,374